MONITORING WELL COMPLETION LOG GRN01-0182

PROJECT UMTRA GROUND WATER
LOCATION GREEN RIVER, UT
SITE GREEN RIVER
WELL NUMBER 0182

NORTH COORD. (FT) 238388.52
EAST COORD. (FT) 2386337.03
HOLE DEPTH (FT) 162.00
WELL DEPTH (FT) 150.00

DATE DRILLED 06/10/2002 to 06/12/2002
SURFACE ELEV. (FT NGVD) 4099.80
TOP OF CASING (FT) 4101.52
MEAS. PT. ELEV. (FT) 4101.52
SLOT SIZE (IN) 0.020
BIT SIZE(S) (IN) 8.0

WELL INSTALLATION		INTERVAL (FT)		
SURFACE CASING:				
BLANK CASING:	4 in. PVC Sch 40	-1.72	to	140.0
WELL SCREEN:	4 in. 0.02 Slotted PVC	140.0	to	150.0
SUMP/END CAP:				
SURFACE SEAL:	Cement	0.0	to	2.0
GROUT:	Bentonite	2.0	to	132.0
SEAL:	Bentonite Pellets	132.0	to	137.0
UPPER PACK:	20-40 Silica Sand	137.0	to	151.0
LOWER PACK:	10-20 Silica Sand	151.0	to	162.0

DRILLING METHOD ROTASONIC
SAMPLING METHOD ROTASONIC CORE
DATE DEVELOPED 06/18/2002
WATER LEVEL (FT BTOC) 19.67 on 06/18/2002
LOGGED BY Dayvault, R.
REMARKS Spent 1 day fishing for 4 pieces of casing. Set well in lower unit of Cedar Mountain Formation.

DEPTH (FT BGL)	ELEV. (FT NGVD)	BLOW COUNTS	SAMPLE ID.	EXTENT	WELL DIAGRAM	GRAPHIC LOG	LITHOLOGIC DESCRIPTION
					Cement		0-1.5 ft. SAND (SP); some pebbles, colluvial material derived from sandstone.
							1.5-5.0 ft. DAKOTA SANDSTONE: 1.5-4.0 ft. MUDSTONE; grayish friable weathered shale to mudstone.
5	4095						4.0-5.0 ft. SHALE; friable dark gray, Fe-stained. (basal conglomerate of Dakota not present here). 5.0-162.0 ft. CEDAR MOUNTAIN FORMATION: 5.0-7.0 ft. MUDSTONE/SILTSTONE; friable olive gray.
							7.0-12.0 ft. SHALE;gray friable, some Fe-staining.
10	4090						12.0-30.0 ft. SILTSTONE; indurated olive greenish gray shaley siltstone.
15	4085						15.0-17.5 ft. friable gray shaley siltstone, Fe-staining prominent in siltstone from 16.0-16.5 ft.
							17.5-30.0 ft. siltstone contains calcareous nodules, series of layers containing calcareous concretions, mottled with pyrite and voids containing calcite, dog tooth, crystals, nodules often greater than 6.0" - drilled some with water - fines washout. Drilled without water - shale/mudstone is preserved. All matrix supporting nodules is calcareous.
20	4080				PVC Sch 40		
	4075						

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DEPTH (FT BGL)	ELEV. (FT NGVD)	BLOW COUNTS	SAMPLE ID.	EXTENT	WELL DIAGRAM	GRAPHIC LOG	LITHOLOGIC DESCRIPTION
30	4070				← Bentonite		30.0-41.5 ft. SILTY SHALE; no nodules.
35	4065						35.0-41.5 more calcareous nodules with pyrite.
40	4060						41.5-43.0 ft. SANDSTONE; fine grained, light gray (N7), slightly calcareous.
							43.0-56.0 ft. SILTSTONE; light gray to greenish gray siltstone with clays, some very fine pyrite crystals associated with, shaley lenses. Dark greenish gray (5 GY 4/1), calcareous nodules intermittent.
45	4055						
50	4050						
55	4045						56.0-65.0 SANDSTONE; hard zone composed of calcareous

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							nodules and associated fine grained light gray sandstone, partings with drusy calcite crystals; drilled with water - not calcareous.
60	4040						
65	4035						65.0-74.0 ft. MUDSTONE; silty calcareous mudstone to siltstone with pyrite as isolated crystals, blebs and clusters to 8mm in tiny octahedrons, mudstone contains numerous rounded lithics to 2 mm.
70	4030				Bentonite		
75	4025						74.0-75.5 ft. SHALE; interbedded with limestone - micritic with shale partings, light gray (5G 6/1), tiny pyrite crystals, vertical veins to 1.0 mm, contains calcite and pyrite.
							75.5-91.5 ft. SILTSTONE; indurated greenish gray siltstone to shale (5G 6/1) containing rounded clasts to 1 cm, pyrite, veins of calcite 0.5mm thick. Calcareous to 83.0 ft, noncalcareous to 91.5 ft. (except for calcite veins). Nodular zone from 81.5 to 83.0 ft.
80	4020						
85	4015						

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90	4010				PVC Sch 40		@91.5 ft. switched to 4.0" in diameter core, some material washed out, probably continued siltstone, as above.
95	4005						@97.5 ft. clayey fraction, light pink gray (5YR 8/1). 97.5-102.0 ft. SILTSTONE; calcareous nodules with very finely disseminated pyrite.
100	4000						102.0-117.0 ft. SHALE; mauve color - mudstone and siltstone, color is (5R 4/2) and dark gray (N3), calcareous nodules, small areas (up to 1 x 3 cm) are light greenish gray included in mauve host rock that probably represents less oxidized regions. @109.0ft layer is no longer calcareous.
105	3995						
110	3990						
115	3985						117.0-158.5 ft. SANDSTONE; very light gray (N8) with slight greenish cast fine grained, slightly calcareous, possible crossbedding, becomes coarser at 123.0 and 124.0 ft.
120	3980				PVC Sch 40		

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125	3975						124.0-137.0 ft. color change, mauve colored mud with dark gray chips of shale to light gray fragments of fine grained sandstone. Becomes calcareous at near 137.0 ft., and from 132.0 to 137.0 ft. color changes to light gray
130	3970						
135	3965				Bentonite Pellets		
					20-40 Silica Sand		137.0-158.5 ft. prominent fine grained sandstone, very light gray (N8), with slight greenish cast, calcareous but with good porosity, pyrite common - some in veinlets, friable, rounded quartz grains, "sponge" texture.
140	3960						
145	3955				0.020" Slotted PVC		
150	3950						

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